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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,770	CADILLACH, FELIP FERRER	
	Examiner	Art Unit	
	Leo T. Hinze	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20050919*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Claim Objections

2. Claims 12-20, 22, and 23 are objected to because of the following informalities: it appears that "on of" in line 9 of claim 12 should be "one of".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1 -10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 recites the feature "some respective printing rollers" in line 4. It is not clear what quantity of printing rollers is defined by the term "some." To expedite prosecution, the examiner will interpret "some" to mean at least one.

Correction or clarification is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought

to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 9-12, and 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delwiche et al., US 6,220,157 B1 (hereafter Delwiche) in view of Kishine et al., US 4,690,051 (hereafter Kishine).

a. Regarding claim 1:

Delwiche teaches a method of registering various colors in flexography, implemented by means of a flexographic printer ("flexographic printing," col. 1, l. 9) of the type that comprises at least one rotating supporting drum (59, Fig. 3), which supports the material to be printed (69, Fig. 3), and at least first and second printing groups (see multiple printing groups 63, Fig. 3) which include some respective printing rollers with the same known printing length, with said first and second printing groups configured, arranged and selectively driven to change between a printing position, in which said first and/or second printing roller are in contact with said material to be printed on the cited supporting drum, and an inactive position, in which the first and/or second printing roller are separated from the material to be printed ("up to 11 colors," col. 8, ll. 50-51 and "ability to run 6 or less color job," col. 9, l. 1, imply the ability to selectively place the printing groups in an active or inactive position) and where the first and second printing rollers are driven by at least one driving group (see gear train, Fig. 9); regulated by at least one controller (106, Fig. 9). Delwiche teaches obtaining registration of each printing group by printing a predefined mark, sensing its location, and subsequently adjusting the printing group (col. 7, ll. 23-30).

Delwiche does not teach:

a) placing the first printing group at said printing position and the second printing group at said inactive position and print at least one first mark on the material to be printed by means of the first printing roller of the first printing group;

b) detecting, by means of an optical sensor, located downstream from the first and second printing groups, the position of said first mark on the material to be printed, and generating a first position signal representative of the longitudinal and transversal positions of the first mark within said printing length;

c) placing the first printing group at said inactive position and the second printing group at said printing position and print at least one second mark, separated from said first mark, on the material to be printed by means of the second printing roller of the second printing group;

d) detecting, by means of said optical sensor, the position of said second mark on the material to be printed and generating a second position signal representative of the longitudinal and transversal positions of the second mark within said printing length; and one of:

e1) generating, by means of said controller, first and second adjustment signals in function of a comparison between each of said first and second position signals and a pre-established position signal; and

f1) adjusting, by means of said at least one driving group, the angular and axial positions of the first and second printing rollers based on said first and second adjustment signals;

or

e2) generating, by means of said controller, an adjustment signal in function of a comparison between the second position signal and the first position signal, which is taken as reference; and

f2) adjusting, by means of said at least one driving group, the angular and axial positions of the second printing roller based on said adjustment signal in accordance with the detected position of the first mark within said printing length.

Kishine teaches a method of registration of a multi-color press, including:

a) placing a first and second printing group ("multiple printing press," col. 1, l. 65) at a printing position and print a first and second mark (M4, M3, Fig. 1; col. 4, ll. 27-29; "registration mark images M4, M3, M2, and M1 which have been printed from the first, second, third, and fourth printing plates respectively," col. 5, ll. 6-8) on the material to be printed by means of a first printing roller of a first printing group and the second printing roller of a second printing group;

b) detecting, by means of an optical sensor, located downstream from the first and second printing groups, the position of said first and second marks on the material to be printed (col. 4, ll. 40-42), and generating a first and second position signal representative of the longitudinal and transversal positions of the first and second marks within said printing length ("sensor output pulses," col. 5, l. 12);

e2) generating, by means of said controller, an adjustment signal ("output signal as above from the CPU 30 ... depends, of course, on the difference between the counted pulse number A1 representative of the actual distance between the two

registration mark images," col. 5, ll. 60-64) in function of a comparison between the second position signal and the first position signal, which is taken as reference (col. 5, ll. 9-17); and

f2) adjusting, by means of said at least one driving group, the angular (col. 5, ll. 42-66) and axial (col. 6, ll. 48-65) positions of the second printing roller based on said adjustment signal in accordance with the detected position of the first mark within said printing length. Kishine teaches that exact registration of the different color images on the web is of utmost importance for the manufacture of high quality products (col. 1, ll. 23-25), and that this registration method is advantageous in reducing waste of paper and make-ready time (col. 1, ll. 34-36).

Kishine does not teach performing registration of multiple printing groups serially.

A person having ordinary skill has the knowledge and skill to recognize that performing registration of multiple printing groups printing in either serial or parallel fashion would produce the same result, i.e. properly registered printing groups.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the registration method of Delwiche to include: a) placing a first and second printing group at a printing position and print a first and second mark on the material to be printed by means of a first printing roller of a first printing group and the second printing roller of a second printing group; b) detecting, by means of an optical sensor, located downstream from the first and second printing groups, the position of said first and second marks on the material to be printed, and generating a first and second position signal representative of the longitudinal and

transversal positions of the first and second marks within said printing length; e2) generating, by means of said controller, an adjustment signal in function of a comparison between the second position signal and the first position signal, which is taken as reference; and f2) adjusting, by means of said at least one driving group, the angular and axial positions of the second printing roller based on said adjustment signal in accordance with the detected position of the first mark within said printing length, because Kishine teaches that that exact registration of the different color images on the web is of utmost importance for the manufacture of high quality products, and that this registration method is advantageous in reducing waste of paper and make-ready time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to additionally modify the registration method of Delwiche such that registration of each printing group is performed serially instead of in parallel, because the ordinarily skilled person would recognize that both methods are equivalent and equally effective for obtaining proper registration of multiple printing groups.

b. Regarding claim 2, the combination of Delwiche and Kishine teaches a method in accordance with claim 1 as discussed in the rejection of claim 1 above. The combination of Delwiche and Kishine also teaches wherein said flexographic printer includes further printing groups placed upstream from said optical sensor (Delwiche teaches multiple printing groups, Fig. 4; Kishine teaches multiple printing groups, "multiple printing press," col. 1, l. 65) configured, arranged and selectively driven in order to change between said printing and inactive positions, with said further printing groups having respective printing rollers with the cited known printing length, driven by

at least one driving group controlled by said at least one controller, with the method also comprising: g) sequentially placing each further printing group in said printing position maintaining the other first, second and further printing groups in the inactive position, and printing further separated marks on the material to be printed (2) by the printing rollers of the further printing groups; h) sequentially detecting, by means of said optical sensor, the positions of said further marks on the material to be printed, and generating further position signals representative of the longitudinal and transversal positions of the respective further marks within said printing length; and j1) generating, by means of said controller, further adjustment signals in function of a comparison between each of said further position signals and the first position signal, which is taken as reference; and j2) adjusting, by means of the corresponding driving groups, the angular and axial positions of each further printing roller based on said further adjustment signals in accordance with the detected position of the first mark within said printing length (the combination of Delwiche and Kishine as set forth in the rejection of claim 1 above is applicable to any printing press with more than one printing group; Kishine teaches registration of a four-group press, "registration mark images M4, M3, M2, and M1 which have been printed from the first, second, third, and fourth printing plates respectively," col. 5, ll. 6-8).

c. Regarding claim 9:

The combination of Delwiche and Kishine teaches a method in accordance with claim 2 as discussed in the rejection of claim 2 above.

The combination of Delwiche and Kishine does not teach wherein the first printing group is placed in a position that is more downstream than the second printing group and further printing groups.

It has been held that mere rearrangement of parts is not sufficient to patentably distinguish an invention over the prior art. See MPEP § 2144.04(VI).

A person having ordinary skill has the knowledge and skill to recognize that rearranging the order of the printing groups would not materially affect the proper registration of the printing groups, and would only require minor adjustments to the method and any associated control programs to account for the rearrangement of the order. The ordinarily skilled person would further recognize that the order of the printing groups may need to be altered as necessary for specific printing applications.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to additionally modify Delwiche wherein the first printing group is placed in a position that is more downstream than the second printing group and further printing groups, because a person having ordinary skill in the art would recognize that rearrangement of the order of the printing groups would not affect the proper registration of the printing groups, and that the specific order of the printing groups may need to be altered as necessary for specific printing applications.

d. Regarding claim 10, the combination of Delwiche and Kishine teaches a method in accordance with claim 1 as discussed in the rejection of claim 1 above. The combination of Delwiche and Kishine also teaches wherein said optical sensor is a chromatic optical sensor ("optical sensor 28," col. 4, ll. 58-59, Fig. 2).

e. Regarding claim 11:

Delwiche teaches a flexographic printer ("flexographic printing," col. 1, l. 9) with a various colors printing register device, the printer comprising:

at least one rotating supporting drum (59, Fig. 3), which supports the material to be printed (69, Fig. 3), and at least first and second printing groups (see multiple printing groups 63, Fig. 3) which include respective printing rollers with the same known printing length, with said first and second printing groups configured, arranged and selectively driven to change between a printing position, in which said first and/or second printing roller are in contact with said material to be printed on the cited supporting drum, and an inactive position, in which the first and/or second printing roller are separated from the material to be printed ("up to 11 colors," col. 8, ll. 50-51 and "ability to run 6 or less color job," col. 9, l. 1, imply the ability to selectively place the printing groups in an active or inactive position) and where the first and second printing rollers are driven by at least one driving group (see gear train, Fig. 9); regulated by at least one controller (106, Fig. 9); and a sensor placed downstream from the printing groups and arranged to detect marks printed by the printing groups (col. 6, ll. 37-50). Delwiche teaches obtaining registration of each printing group by printing a predefined mark, sensing its location, and subsequently adjusting the printing group (col. 7, ll. 23-30).

Delwiche does not teach:

an optical sensor placed downstream from the first and second printing groups and arranged to detect at least first and second separated marks, respectively and

consecutively printed by the first and second printing rollers on the material to be printed; with said controllers adapted and connected to:

receive from said optical sensor first and second position signals representative of the longitudinal and transversal positions of the respective first and/or second marks within said printing length; and one of:

generate first and second adjustment signals in function of a comparison of each of said first and second position signals with a pre-established position signal, said at least one driving group adjusting, based on said first and second adjustment signals, the angular and axial positions of the first and second printing rollers;

or

generate an adjustment signal in function of a comparison of the second position signal with the first position signal, which is taken as reference, said at least one driving group adjusting, based on said adjustment signal, the angular and axial positions of the second printing roller in accordance with the detected longitudinal and transversal positions of the first mark within the printing length.

Kishine teaches a method of registration of a multi-color press, including:

an optical sensor placed downstream from the first and second printing groups and arranged to detect at least first and second separated marks (col. 4, ll. 40-42), respectively and consecutively printed by the first and second printing rollers on the material to be printed (M4, M3, Fig. 1; col. 4, ll. 27-29; "registration mark images M4, M3, M2, and M1 which have been printed from the first, second, third, and fourth

printing plates respectively," col. 5, ll. 6-8); with said controllers adapted and connected to :

receive from said optical sensor first and second position signals representative of the longitudinal and transversal positions of the respective first and/or second marks within said printing length ("sensor output pulses," col. 5, l. 12); and

generate an adjustment signal in function of a comparison of the second position signal with the first position signal ("output signal as above from the CPU 30 ... depends, of course, on the difference between the counted pulse number A1 representative of the actual distance between the two registration mark images," col. 5, ll. 60-64), which is taken as reference (col. 5, ll. 9-17), said at least one driving group adjusting, based on said adjustment signal, the angular (col. 5, ll. 42-66) and axial (col. 6, ll. 48-65)positions of the second printing roller in accordance with the detected longitudinal and transversal positions of the first mark within the printing length.

Kishine teaches that exact registration of the different color images on the web is of utmost importance for the manufacture of high quality products (col. 1, ll. 23-25), and that this registration method is advantageous in reducing waste of paper and make-ready time (col. 1, ll. 34-36).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the registration method of Delwiche to include: an optical sensor placed downstream from the first and second printing groups and arranged to detect at least first and second separated marks, respectively and consecutively printed by the first and second printing rollers on the material to be

printed; with said controllers adapted and connected to: receive from said optical sensor first and second position signals representative of the longitudinal and transversal positions of the respective first and/or second marks within said printing length; and generate an adjustment signal in function of a comparison of the second position signal with the first position signal, which is taken as reference, said at least one driving group adjusting, based on said adjustment signal, the angular and axial positions of the second printing roller in accordance with the detected longitudinal and transversal positions of the first mark within the printing length, because Kishine teaches that that exact registration of the different color images on the web is of utmost importance for the manufacture of high quality products, and that this registration method is advantageous in reducing waste of paper and make-ready time.

f. Regarding claim 12, the combination of Delwiche and Kishine teaches a printer in accordance with claim 11 as discussed in the rejection of claim 11 above. The combination of Delwiche and Kishine also teaches wherein it includes further printing groups placed upstream from said optical sensor (Delwiche teaches multiple printing groups, Fig. 4; Kishine teaches multiple printing groups, "multiple printing press," col. 1, l. 65) configured, arranged and selectively driven in order to change between said printing and inactive positions, with said further printing groups having respective printing rollers with the cited known printing length, driven by at least one driving group controlled by said at least one controller, being said controller adapted and connected also to: receive from said optical sensor further position signals that are representative of the longitudinal and transversal positions of the respective further marks within the

printing length; and generate further adjustment signals in function of a comparison of the further position signals with the first position signal, which is taken as reference, said at least one driving group adjusting, based on said further adjusting signals, the angular and axial positions of the further printing rollers in accordance with the detected longitudinal and transversal positions of the first mark within the printing length (the combination of Delwiche and Kishine as set forth in the rejection of claim 1 above is applicable to any printing press with more than one printing group; Kishine teaches registration of a four-group press, "registration mark images M4, M3, M2, and M1 which have been printed from the first, second, third, and fourth printing plates respectively," col. 5, ll. 6-8).

g. Regarding claim 15:

The combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The combination of Delwiche and Kishine also teaches wherein the first and second printing rollers, or first, second and further printing rollers are driven by respective first and second driving groups or first, second and further driving groups (Delwiche, "each component could incorporate a separate servo drive," col. 8, ll. 5-6; "Anyone skilled in the art would be able to modify the drive train components without affecting the overall invention," col. 8, ll. 10-12; this is a teaching that one could have a common drive for each printing group, or separate drives for each printing group) and are associated with an angular position detectors (both Delwiche and Kishine only teach a single encoder: Delwiche, "encoder signal,"

col. 6, l. 49; Kishine, "rotary encoder, not shown, coupled to the common drive shaft," col. 5, ll. 21-22).

The combination of Delwiche and Kishine does not teach respective first and second angular position detectors or first, second and further angular position detectors

It has been held that mere duplication of parts is not sufficient to patentably distinguish an invention over the prior art. See MPEP § 2144.04 (VI).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to additionally modify Delwiche to include a rotary encoder associated with each individual driving group, because Delwiche teaches that one having ordinary skill in the art could supply separate driving groups for each printing unit, and further, because one having ordinary skill in the art would then recognize the need for separate encoders for each driving group.

h. Regarding claim 16, the combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The combination of Delwiche and Kishine also teaches wherein the first and second printing rollers, or first, second and further printing rollers are driven by respective first and second driving groups or first, second and further driving groups driven by an angular position control signal with respect to time that is common to all of them, or set point signal (Delwiche, "each component could incorporate a separate servo drive," col. 8, ll. 5-6; "Anyone skilled in the art would be able to modify the drive train components without affecting the overall invention," col. 8, ll. 10-12; this is a teaching that one could

have a common drive for each printing group, or separate drives for each printing group; "encoder signal," col. 6, l. 49).

i. Regarding claim 17, the combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The combination of Delwiche and Kishine also teaches wherein the supporting drum and the first and second printing rollers or the supporting drum and the first, second and further printing rollers are rotationally driven by a single common driving group, and the supporting drum is associated with at least one angular position detector (see common driving group in Delwiche, Fig. 9; "encoder signal," col. 6, l. 49).

j. Regarding claim 18, the combination of Delwiche and Kishine teaches a printer in accordance with claim 15 as discussed in the rejection of claim 15 above. The combination of Delwiche and Kishine also teaches wherein the first printing roller is capable of being driven to rotate at a printing rotating speed while the first printing group is placed at the inactive position and said comparison of the second position signal or second and further position signals with the first position signal is performed. One having ordinary skill would recognize that having inactive rollers rotate at a printing speed would preserve any existing registration of the printing rollers; conversely, not having the inactive printing rollers rotate at the printing speed would eliminate any prior registration.

k. Regarding claim 19, the combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The

combination of Delwiche and Kishine also teaches wherein said optical sensor is a chromatic optical sensor ("optical sensor 28," col. 4, ll. 58-59, Fig. 2).

l. Regarding claim 20:

The combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above.

The combination of Delwiche and Kishine does not teach wherein the first printing group is placed in a position that is more downstream than the second printing group and further printing groups.

It has been held that mere rearrangement of parts is not sufficient to patentably distinguish an invention over the prior art. See MPEP § 2144.04(VI).

A person having ordinary skill has the knowledge and skill to recognize that rearranging the order of the printing groups would not materially affect the proper registration of the printing groups, and would only require minor adjustments to the method and any associated control programs to account for the rearrangement of the order. The ordinarily skilled person would further recognize that the order of the printing groups may need to be altered as necessary for specific printing applications.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to additionally modify Delwiche wherein the first printing group is placed in a position that is more downstream than the second printing group and further printing groups, because a person having ordinary skill in the art would recognize that rearrangement of the order of the printing groups would not affect the

proper registration of the printing groups, and that the specific order of the printing groups may need to be altered as necessary for specific printing applications.

m. Regarding claim 21, the combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The combination of Delwiche and Kishine also teaches wherein the optical sensor is placed to scan a lateral margin of the material to be printed, while the material to be printed is on the supporting drum and moves along with it in order to detect the first and second marks (Delwiche, see location of marks in the margin of the paper, Fig. 10).

n. Regarding claim 22, the combination of Delwiche and Kishine teaches a printer in accordance with claim 15 as discussed in the rejection of claim 15 above. The combination of Delwiche and Kishine also teaches wherein each of the first and second driving groups or first, second and further driving groups include at least one rotating driving motor (Kishine, 36, Fig. 2) to rotate the corresponding printing roller and at least one linear driving motor (Kishine, 44, Fig. 2) to linearly move the corresponding printing roller in the axial direction.

o. Regarding claim 23, the combination of Delwiche and Kishine teaches a printer in accordance with claim 22 as discussed in the rejection of claim 22 above. The combination of Delwiche and Kishine also teaches wherein at least one angular position detector is associated with said linear driving motor (Kishine, 44, 46, Fig. 2; "rotary to linear converter," col. 6, l. 59).

6. Claims 3-8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delwiche in view of Kishine as applied to claims 2 and 12 above, and further in view of Kot, US 7,131,379 B1 (hereafter Kot).

a. Regarding claim 3:

The combination of Delwiche and Kishine teaches a method in accordance with claim 2 as discussed in the rejection of claim 2 above. The combination of Delwiche and Kishine also teaches wherein the first, second and further marks have a triangular shape and comprise a transversal edge that is perpendicular to a longitudinal lateral edge of the material to be printed and an oblique edge (see the triangular shape of the marks M1-M4, Kishine, Fig. 2).

The combination of Delwiche and Kishine does not teach wherein the first, second and further marks have a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed.

Kot teaches a method of controlling register in a multicolor printing press (col. 1, ll. 9-11), wherein the register marks are triangular with a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed (see shape of marks, Fig. 1).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify Delwiche to include a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed, thereby turning the registration mark of Delwiche into an enclosed triangle, instead of an open triangular shape, because a person having ordinary skill in the art would recognize that a close

triangular shape may be more aesthetically pleasing than an ugly, clunky, open triangular shape.

b. Regarding claim 4:

The combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 3 as discussed in the rejection of claim 3 above. The combination of Delwiche, Kishine and Kot also teaches wherein the first, second and further printing rollers of the flexographic printer are driven by respective first, second and further driving groups (Delwiche, "each component could incorporate a separate servo drive," col. 8, ll. 5-6; "Anyone skilled in the art would be able to modify the drive train components without affecting the overall invention," col. 8, ll. 10-12; this is a teaching that one could have a common drive for each printing group, or separate drives for each printing group) and are associated with an angular position detector (both Delwiche and Kishine only teach a single encoder: Delwiche, "encoder signal," col. 6, l. 49; Kishine, "rotary encoder, not shown, coupled to the common drive shaft," col. 5, ll. 21-22), and further comprising: determining the cited longitudinal positions of the respective first, second and further marks within said printing length from respective readings of angular position signals coming from the first angular position detector of the first printing roller at the times of detecting a front edge, constituted either by said transversal edge or by said oblique edge, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 5, ll. 3-43); and determining the cited transversal positions of the respective first, second and further marks within said printing length from a difference between readings of angular position signals coming from the first angular

position detector of the first printing roller at the times of detecting the transversal or oblique edges, respectively, or vice versa, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 6, ll. 23-47).

The combination of Delwiche, Kishine and Kot does not teach respective first, second and further angular position detectors.

It has been held that mere duplication of parts is not sufficient to patentably distinguish an invention over the prior art. See MPEP § 2144.04 (VI).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to additionally modify Delwiche to include a rotary encoder associated with each individual driving group, because Delwiche teaches that one having ordinary skill in the art could supply separate driving groups for each printing unit, and further, because one having ordinary skill in the art would then recognize the need for separate encoders for each driving group.

c. Regarding claim 5, the combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 3 as discussed in the rejection of claim 3 above. The combination of Delwiche, Kishine and Kot also teaches wherein the first, second and further printing rollers of the flexographic printer are driven by respective first, second and further driving groups (Delwiche, "each component could incorporate a separate servo drive," col. 8, ll. 5-6; "Anyone skilled in the art would be able to modify the drive train components without affecting the overall invention," col. 8, ll. 10-12; this is a teaching that one could have a common drive for each printing group, or separate drives for each printing group) driven by an angular position control signal with respect

to time that is common to all of them, or set point signal (both Delwiche and Kishine only teach a single encoder: Delwiche, "encoder signal," col. 6, l. 49; Kishine, "rotary encoder, not shown, coupled to the common drive shaft," col. 5, ll. 21-22), and further comprising: determining the cited longitudinal positions of the respective first, second and further marks within said printing length from respective readings of angular position signals coming from the first angular position detector of the first printing roller at the times of detecting a front edge, constituted either by said transversal edge or by said oblique edge, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 5, ll. 3-43); and determining the cited transversal positions of the respective first, second and further marks within said printing length from a difference between readings of angular position signals coming from the first angular position detector of the first printing roller at the times of detecting the transversal or oblique edges, respectively, or vice versa, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 6, ll. 23-47).

d. Regarding claim 6, the combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 3 as discussed in the rejection of claim 3 above. The combination of Delwiche, Kishine and Kot also teaches wherein the supporting drum and the first and second printing rollers or the supporting drum and the first, second and further printing rollers are rotationally driven by a single common driving group, and the supporting drum is associated with at least one angular position detector (see common driving group in Delwiche, Fig. 9; "encoder signal," col. 6, l. 49), and further comprising: determining the cited longitudinal positions of the respective first, second and further

marks within said printing length from respective readings of angular position signals coming from the first angular position detector of the first printing roller at the times of detecting a front edge, constituted either by said transversal edge or by said oblique edge, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 5, ll. 3-43); and determining the cited transversal positions of the respective first, second and further marks within said printing length from a difference between readings of angular position signals coming from the first angular position detector of the first printing roller at the times of detecting the transversal or oblique edges, respectively, or vice versa, of each of the respective first, second and further marks by the optical sensor (Kishine, col. 6, ll. 23-47).

e. Regarding claim 7, the combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 3 as discussed in the rejection of claim 3 above. The combination of Delwiche, Kishine and Kot also teaches wherein the first, second and further marks are printed in a side margin of the material to be printed, free from a main print motif (Delwiche, see location of marks in the margin of the paper, Fig. 10).

f. Regarding claim 8, the combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 4 as discussed in the rejection of claim 4 above. The combination of Delwiche, Kishine and Kot also teaches wherein the first printing roller is maintained rotating at a printing rotating speed when placed at said inactive position after having detected the longitudinal and transversal positions of the first mark printed by the same within the printing length. One having ordinary skill would recognize that having inactive rollers rotate at a printing speed would preserve any existing registration

of the printing rollers; conversely, not having the inactive printing rollers rotate at the printing speed would eliminate any prior registration.

g. Regarding claim 13:

The combination of Delwiche and Kishine teaches a printer in accordance with claim 12 as discussed in the rejection of claim 12 above. The combination of Delwiche and Kishine also teaches wherein the first, second and further marks have a triangular shape and comprise a transversal edge that is perpendicular to a longitudinal lateral edge of the material to be printed and an oblique edge (see the triangular shape of the marks M1-M4, Kishine, Fig. 2).

The combination of Delwiche and Kishine does not teach wherein the first, second and further marks have a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed.

Kot teaches a method of controlling register in a multicolor printing press (col. 1, ll. 9-11), wherein the register marks are triangular with a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed (see shape of marks, Fig. 1).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify Delwiche to include a longitudinal edge parallel to said lateral longitudinal edge of the material to be printed, thereby turning the registration mark of Delwiche into an enclosed triangle, instead of an open triangular shape, because a person having ordinary skill in the art would recognize that a close triangular shape may be more aesthetically pleasing than an ugly, clunky, open triangular shape.

h. Regarding claim 14, the combination of Delwiche, Kishine and Kot teaches a method in accordance with claim 13 as discussed in the rejection of claim 13 above. The combination of Delwiche, Kishine and Kot also teaches wherein the first, second and further marks are printed in a side margin of the material to be printed, free from a main print motif (Delwiche, see location of marks in the margin of the paper, Fig. 10).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo T. Hinze whose telephone number is 571.272.2864. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571.272.2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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